



Material Safety Data Sheet

FC05-04 Perfluorobutyl Ethyl Acrylate

Revised 10-August-2009

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Product name: FC05-04
Chemical name: Perfluorobutyl ethyl acrylate;
1*H*,1*H*,2*H*,2*H*-Nonafluorohexyl-1-acrylate
Chemical formula: CH₂=CHC(O)OCH₂CH₂(CF₂CF₂)₂F
C₉H₇F₉O₂

Company Identification

Distributor: Fluoryx, Inc.
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USA
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2. COMPOSITION AND INFORMATION ON INGREDIENTS

Components

Material	CAS Number	EINECS	TSCA Listed	Amount
2-(Perfluorobutyl) ethyl acrylate	52591-27-2	NA	NA	> 97 %
2,6-Di- <i>tert</i> -butyl-4-methylphenol	128-37-0	204-881-4	Yes	30 ppm

3. HAZARDS IDENTIFICATION

Flammability

Flammable: Flash point = 52 °C (closed cup)

Potential Health Effects

Skin contact: May cause irritation.
Eye contact: May cause irritation.
Inhalation of spray or mist: May cause nasal, throat, or lung irritation.
Inhalation of large amounts: May be toxic to the lungs.
Symptoms: May be modest initially, followed in hours by severe shortness of breath requiring prompt medical attention.

Carcinogenicity Information:

None of the components present in this material at concentrations equal to or greater than 0.1 % are

listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

4. FIRST AID MEASURES

Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin Contact:	Flush skin with water after contact. Wash contaminated clothing before reuse.
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion:	If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.
Note to Physicians:	Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

5. FIRE FIGHTING MEASURES

Flammable Properties Flash point:	52 °C (closed cup)
Hazardous Decomposition Products:	Hazardous decomposition products include carbon dioxide, carbon monoxide, and hydrogen fluoride. Toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.
Extinguishing Media:	Water spray, foam, dry chemical, CO ₂ .
Fire Fighting Instructions:	Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Avoid breathing decomposition products.

6. ENVIRONMENTAL SECTION

The result for PFOS and PFOA testing is Not Detected (Method Detection Limit = 0.004 ppm).

7. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel) NOTE:	Review FIRE FIGHTING MEASURES and HANDLING (Personnel) sections before proceeding with clean-up. Use appropriate personal protective equipment during clean-up.
Spill clean up:	Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.
Personal Precautions:	Refer to section 9 of MSDS for personal protection details. If outside, do not approach from downwind.

If outside, keep bystanders upwind and away from danger point. Mark-out the contaminated area with signs and prevent access to unauthorized personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

Environmental Precautions:

Do not discharge into drains or rivers. Contain the spillage using bunding.

Clean-Up Procedures:

Absorb into dry earth or sand. Transfer to a closable, labeled salvage container for disposal by an appropriate method.

8. HANDLING AND STORAGE

Handling Requirements:

Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air. Only use in a fume hood.

Storage Conditions:

Store in a cool, well-ventilated area. Keep container tightly closed.

Suitable Packaging:

Must only be kept in original packaging.

9. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls:

Keep container tightly closed. Use only with adequate ventilation. Vent heated extruder or dryer fumes outside work area. Do not aerosolize. In spray applications, use airless type pressure spray equipment at less than 60 psi, and exhaust ducts, drip pans, or other design features to minimize worker exposure to mists and overspray.

Personal Protective Equipment

Eye/face protection:

Wear safety glasses. Ensure eye-wash is at hand.

Respirators:

Self-contained breathing apparatus must be available in case of emergency.

Protective clothing:

Where there is potential for skin contact, have available and wear as appropriate impervious gloves, apron, pants, and jacket.

Hand protection:

Protective gloves.

10. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	160 °C @ 760 mm Hg
Melting Point	- 68 °C
Flash Point	52 °C (closed cup)
Molecular Weight	318.14 g/mol
Density	1.44 g/mL @ 25 °C
Refractive Index	1.3395 @ 25 °C
Solubility in Water	Negligible
pH	Not determined

Odor	Acrylic
Form	Clear liquid
Color	Colorless liquid

11. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Open flames. Heat.
Materials to Avoid:	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products:	In combustion, emits toxic fumes including carbon monoxide, carbon dioxide, and hydrogen fluoride.
Hazardous Polymerization Reactions:	Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. Check inhibitor content often adding to melted bulk liquid if needed.

12. TOXICOLOGICAL INFORMATION

Chronic Toxicity:	May be harmful by inhalation, ingestion, or skin absorption.
Routes of Exposure:	Refer to section 3 of SDS for routes of exposure and corresponding symptoms. May be harmful if swallowed, inhaled, or absorbed through skin.

13. ECOLOGICAL INFORMATION

No data available.	
General:	Take care to prevent chemicals from entering the ground, water courses or drainage systems.

14. DISPOSAL CONSIDERATIONS

Disposal Operations:	Material should be disposed of in accordance with local, state and federal regulations.
Disposal of Packaging:	Dispose of as special waste in compliance with local and national regulations. Observe all federal, state and local environmental regulations. The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

15. TRANSPORTATION INFORMATION

Mode	DOT/IMDG/IATA
UN Number	UN1993
Class (Subsidiary)	3
Proper Shipping Name	Flammable Liquid, n.o.s.
Hazard Label (Subsidiary)	Flammable Liquid
Packing Group	II
Shipping Hazard Label:	



16. REGULATORY INFORMATION

Hazard Symbols:

Flammable



; Irritant



Risk Phrases:

R36/37/38:

Irritating to eyes, respiratory system and skin.

Safety Phrases:

S26:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39:

Wear suitable protective clothing, gloves and eye/face protection.

S45:

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Note:

The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

17. OTHER INFORMATION

Legal Disclaimer:

For R&D use only. Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

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End of MSDS